EBRUARY 1
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CONSUMERS' GUIDE

FOOD FOR THE BRITISH

Food for Britain

Billions of pounds of American foods now cross the ocean to help fill out the meager meals of front-line allies

1. IN WAR, in peace, people must eat the right foods. So urgently must people get the kind of meals that build both muscles and spirits, that food becomes one of the counters in war strategy along with weapons, munitions, aircraft, vessels, and boats. Congress knows it, for on March 11, 1941, it bracketed food with munitions in the Lend-Lease Bill, officially, "An Act To Promote the Defense of the United States."

Twice in 6 months, Congress has appropriated money for carrying out the purposes of the Lend-Lease Bill. Each time Congress provided money for food as well as munitions to the Lend-Lease countries; those countries, that is, whose defense is believed to be vital to the defense of the United States. The first appropriation was made on March 27, 1941. A total of $500,000,000 of the money appropriated was earmarked for the purchase of food and other agricultural commodities. From the second appropriation on October 28, 1941, a billion dollars was earmarked for the same purpose, making $1,500,000,000 in all.

1. Lend-lease cheese reaches British school children at the end of the bridge of ships.

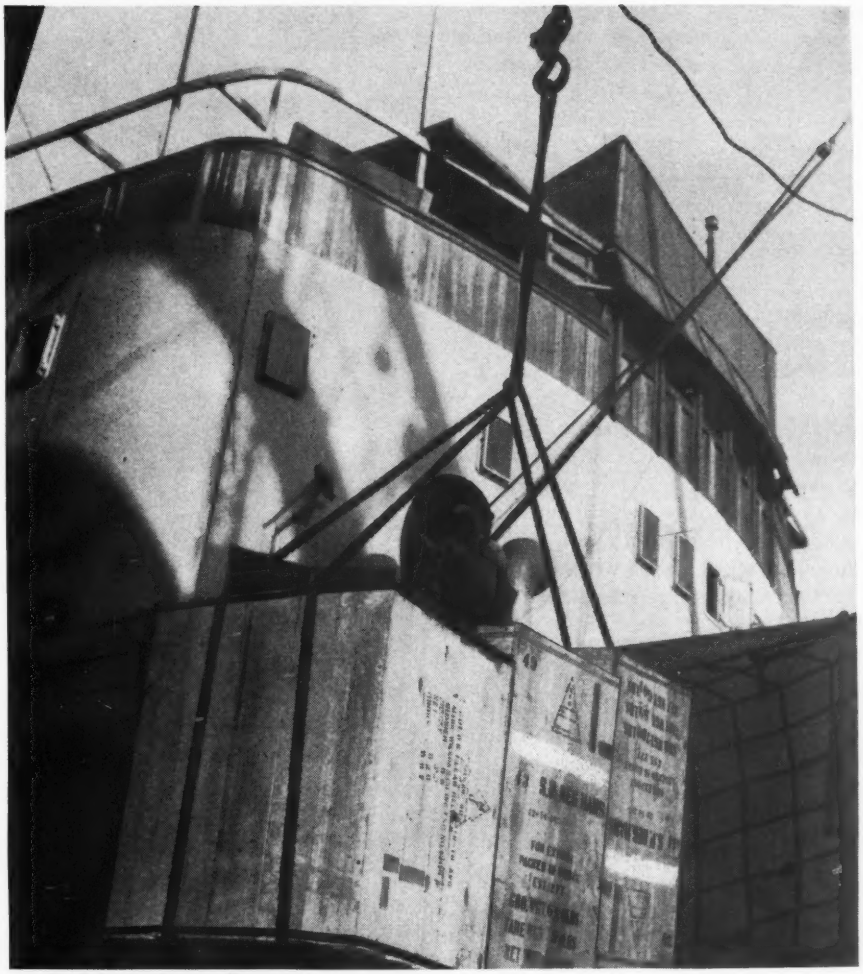
2. Lend-lease purchases are made by Surplus Marketing Administration officials.

2. The Surplus Marketing Administration, that is the agency that runs the Food Stamp Plan, the School Lunch Program, the Penny Milk Program, and the other relief milk programs, purchases the food that goes to England via Lend-Lease. British requests for food and other farm commodities are received by the SMA, whose experts, guided by A-B-C grade standards and other Federal standards and specifications, buy food from American producers and lay it down at the docks for shipment abroad. Lend-Lease purchases, which are turned over to British representatives, become British Government obligations under Lend-Lease provisions.

3. Britain at peace depends upon wave-slogging freighters from overseas for two-thirds of its food. Some of this food came from Canada and Australia and the United States and the Argentine but much of it came from near at hand, Denmark and Holland and other European countries. When those countries lost their freedom the British lost an important source of food supplies. The job of making up the supplies that formerly came from near at hand has fallen largely to the United States.

Great Britain counts on the United States for about 7 percent of its total food supply, for 25 percent of its total protein requirements.

Bulky foods, like wheat and potatoes and most vegetables, the British hope to supply from Empire sources and an expanded and intensified farm and garden program in the United Kingdom. For the concentrated foods like eggs, dried milk, evaporated milk, cheese, cured pork, lard, tomatoes, orange juice, dried beans, and vitamin preparations, the British are largely relying on the United States. By November 30, 1941, it was plain the promise of food implied in the Lend-Lease Bill was being kept. By that date, more than 2 billion 500 million pounds of food had been shipped to England.



3. "Hams," "Take them away." Lend-lease food is loaded for shipment to England.

4. All Lend-Lease foods and practically all other imported foods are imported and owned by the British Ministry of Food. Once they arrive in England, most of them are pushed out to consumers through the ordinary distribution methods by wholesalers and retailers. Sometimes, the Ministry of Food sells food to these distributors at prices which are less than what the food cost the Government. This is one device used by the Government to keep down the cost of living. The cost of this subsidy is close to 500 million dollars a year. Bread is sold at 8 pence (16 cents) for a 4-pound loaf, and the Government gives subsidies to millers and bakers to make this possible.

Every person must have a ration card to be permitted to buy rationed food, but only a few foods are rationed. The ration card carries the name of the family's retailers, the baker, the butcher, and the groceryman. Shopping around from store to store in search of additional quantities of unrationed foods is considered distinctly unpatriotic. Most home-produced fruits and vegetables are not rationed; neither are game and fowl; nor are the meat specialties—liver, kidney, heart, brains, and the like.

4. An English consumer goes to market with a ration book or she can't buy.

5. When foods are rationed, the rationing is based upon quantity except for fresh meats. Rations change, depending upon seasons and the success of convoys, but in the early winter of 1941, the maximum amount that could be purchased for each person each week was set at 12 ounces of sugar, 3 ounces of cheese, 2 ounces of butter, 5 ounces of margarine, 3 ounces of lard, 2 ounces of tea, 4 ounces of bacon, and 1 shilling 2 pence worth of meat (23 cents). Monthly rations per person were one pound of jam, and from 2 to 3 eggs in the shell.

Lend-Lease foods recently have made possible an important addition to the English war diet. Canned pork and beans, canned salmon, other canned fish, and canned meat are contributing strategic proteins to British meals. These foods are distributed on a point system, under which each person is allowed 16 points every 4 weeks. A pound of canned meats or fish each takes 16 points. A can of pork and beans uses up 4 points, and other meats and fish take from 8 to 12 points a can.

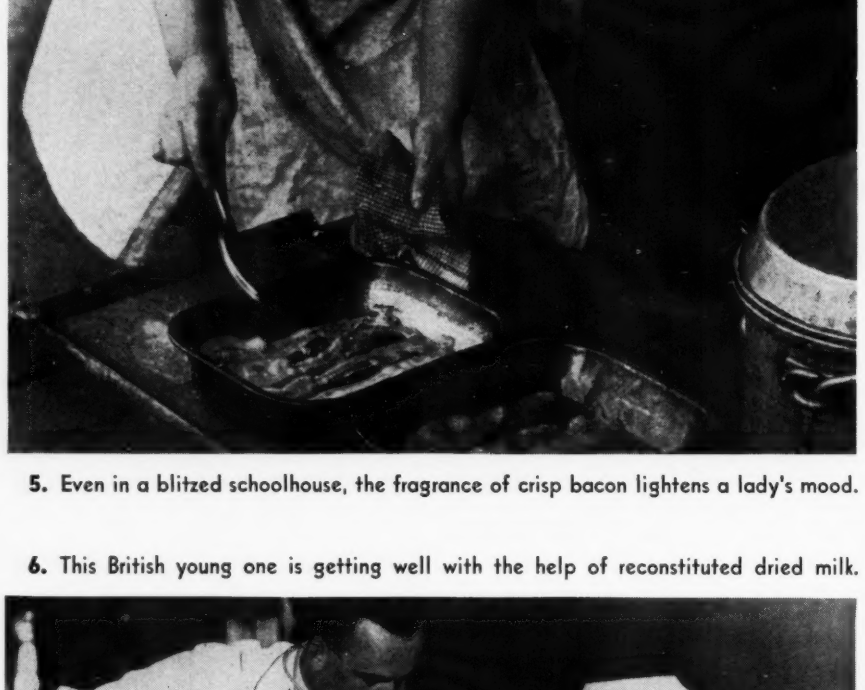
Price fixing plus food subsidies plus rationing have helped to keep food prices down in England, but altogether they have not been able to insure the nutritional musts to everyone. England at war has taken over some familiar American devices, the School Lunch Program and the Penny Milk Program. To these programs they have added innovations of their own: factory and pithead canteens, "British Restaurants," universal milk insurance to children and nursery mothers, and the free distribution of vitamin concentrates to children.

6. Universal milk insurance gives priority on one pint of milk daily to all nursing and expectant mothers, and to all children under 5. Milk for these persons may be bought for slightly more than 2 pence a pint, half the prevailing price. When a family has a total income of less than 40 shillings a week plus 6 shillings for each dependent, it may get its guaranteed milk free. School children get one-third of a pint of milk daily for a ha'penny, slightly less than 1 cent. Dried milk, 20 ounces a week, is supplied infants at a reduced price. Three million people get 11 million gallons of milk a month through the milk scheme. About 30 percent of the milk is distributed free. The total cost of this program is around $70,000,000 a year.

Concentrated orange juice, vitamin C-rich concentrate (and a Lend-Lease product), black currant juice, and cod liver oil are distributed free to children under 2, through schools, clinics, and hospitals.

5. Even in a blitzed schoolhouse, the fragrance of crisp bacon lightens a lady's mood.

6. This British young one is getting well with the help of reconstituted dried milk.



7. School lunches operate in England very much the way that school lunches, helped by SMA, operate in the United States. The Ministry of Foods supplies up to 90 percent of the cost of the hot school lunches, while the schools and the children's parents supply the cooks and bottle washers. Just as in the United States, the lack of equipment slowed up the extension of school lunch programs, but when the blitz made emergency canteens necessary, central kitchens were set up in most English cities to take care of the people who were bombed out of their homes. When the sky is blitz-clear this equipment serves the school-lunch program. The school-lunch program costs about 4 million dollars a year.

7. An English school lunch program operates much like the one the SMA sponsors here.

8. "British Restaurants" emerged from the blitz debris. When kitchens and dining rooms disappeared into rubble, when evacuations broke up families, and war and civilian defense work took women out of their homes, normal meals became impossible for many families. To meet the meal crisis, the British Restaurants were organized by Local Food Control Committees. These committees, made up of 10 consumers and 5 trade representatives, supervise food distribution in each locality. Equipment is obtained from the Ministry of Foods, food is purchased in local markets. It is served cafeteria style. These low-cost nutritious meals can be purchased by anyone. About 1,500 British Restaurants are in operation now, feeding 330,000 people daily. These restaurants, manned largely by volunteer staffs, serve soup with bread for 2 pence, a dessert for a penny (British), and tea or coffee with sugar and condensed milk for a penny. The restaurants are self-supporting.

8. The British Restaurants emerged from emergency communal feeding places like this.

9. The Nutritional Front costs the British government about 600 million dollars a year. Most of these costs were undertaken after the war began because it became obvious the programs were essential to the war effort. Now the United States, with 3 times as many people, but people living much closer to their food supplies, is at war. Government here, too, is aiding handicapped people to eat through its programs for Penny Milk, Relief Milk, the Food Stamp Plan, the School Lunch Program, and direct distribution of foods. Expenditures for these programs now take about 180 million dollars a year.

9. Mobile canteens provide hot meals and snacks for workers who do heavy labor.

In beleaguered Britain

Let's talk about

FOOD

and fuel-saving cookery

You are hearing a lot about saving fuel this winter, and you are eager to do your best. This doesn't mean saving on heating your rooms only; you can save a lot of fuel by planning your coo It certainly requires a little thought care, but many fuel-saving hints are fr saving hints too. Here are some sugge

Oven and hot-plate.

Don't use part of the oven and part of the hot-plate for one batch of cooking.

When you use you so that the whole cooked there ; meat vegetables. Potatoes baked in their jackets are ur

You can cook porridge in five minutes, if you soak the oats or oatmeal in the water all night beforehand.

M.F

FOOD FACTS

No. 42

Let's face the facts squarely —especially FOOD facts

IF you saw your neighbour throw away a loaf of bread, you'd be very indignant. "That woman is as bad as a traitor," you'd say, "Doesn't she realise that wasting food is wasting shipping space—and that we need our shipping space for munitions?" And you'd report the matter to the istry of Food.

ut though waste on a big is criminal, waste on a scale is serious, too. A people throwing away that could be baked for a lot of people throwing egetable water that could ade into soup, a lot of throwing away "left- that could be served make a great deal of indeed. It is only by *out waste altogether* that all win the war on the Front.

Do you ever waste food of any description? A bread crust, an outside cabbage leaf, little bits of left-overs, seem small in themselves. Multiplied by the entire population—45,000,000—they amount to many thousands of tons of wasted food.

Waste of food involves waste of the nation's resources in money and in shipping space, for much of the waste has to be made good by importation. Worse, it may involve waste of seamen's lives.

* * *

Do you neglect to produce all the food you can or to preserve foods whilst they are plentiful? This is another form of waste and it too plays Hitler's game.

* * *

Food is part of the fight — food

IT ISN'T CLEVER

You've met the friend who tells you in a whisper that she got a couple of chops from the butcher without coupons. It isn't clever. No more clever than looting. We all have a job to do — to win this war, and food is one of the most important arms. Tell your friends that if they try to beat the ration, they are trying to beat the Nation. England expects us all to honour the Food Code.

The British Government talks to food buyers through ads like these

food is ammunition

Instead of meat

With less meat than in peace-time and heavier demands on our milk supplies, we look round for other body-building foods to help out. Two new ones have arrived in plenty; fresh-salted cod from Iceland, and white haricot beans from across the Atlantic.

Fish, as a body builder, is practically equal to meat. Beans, too, are body-builders, though not quite as good as fish. Combined with a *little* fish, meat or milk, they are a good alternative to a meat meal. Here are some recipes—easy to prepare, delicious—and cheap.

BROWN FISH STEW WITH BEANS

1 lb. of fresh-sal
the fishmonger. 2
haricot beans. 1 t
of brown gravy
worcester sauce.
dripping. 1 toast
Pepper.

Soak the bea
at least 24 ho
1½ hours; ad
thinly, and
½ hour.

Melt the f
the fish in s
in the fat t
Add the bea
sauce and se
20 minutes.
meal toast.

1½ lbs. of haricot beans, 1 lb. of very mashed potato, ½ lb. of fat American ... dessertspoonful of ... sauce.

BAKED
MASHED
CAPER OI

1 large fill
cod, 2 lbs. of
2 tablespoon
turnip liquor
of chopped
capers. Pepp

Put the
fireproof d
pepper and
in small pi
with a pa
minutes in

Cook th
until tende
mash with

Make t
as much
fish into
flour and
low heat.
pint of tu
until smoo
pickled ra
mustard to

Make
turnips, di
over the

CHINESE

This is
both econo

THE

Lots of things are new in this war. Shortages. Black-out. Different work. Harder travel. We cannot afford to say: "We never did that before." We have to adapt ourselves to constantly changing conditions. It's not always easy, but you'll find lots of help if you listen-in to the Kitchen Front broadcast at 8.15 every morning.

Here are some of the things housewives do now though they *"never did that before"*

Instead of orange juice, *give Baby swede juice or turnip juice*, sweetened of course. To do him the same amount of good as orange juice, Baby need... three times ...

Rinse out milk bottles with a little cold water; use the milky liquid in cooking, *because ... drop of ...*

The Greengrocer says . .

"No, Mrs. Brown, there's no disappearing trick about onions, and you'll get your share all right. . . . You wish there were more of them? So do I. I shan't make my fortune selling those little lots, I can tell you! But there's this about it — it's share and share alike and if we can't grow more we can't have more to share.

Nothing like an onion? You're right, Mrs. Brown. For *flavour* that is. Not for *goodness*. There's plenty of vegetables as *good* as onions. And come to that there's plenty of ve... as al... good as ... grown fruits ... Lord H... did he? C... the pleasure ... wireless. . .. saying wha...

the trade for donkey's years. Runner beans now, and carrots—they're worth a cart-load of tonics and such. And so they were before. I mean before the doctors found out all this about the vitamins in them. Good is good, I say, whatever new-fangled name you give it.

A nice colly, Mrs. Brown? And a cabbage? That's a good heart you've got in your hand. . . . And thank *you*."

Food Facts
NUMBER 58

— THE MI...

NEW RATION BOOKS—

REGISTER THIS WEEK

Last day July 19

You must register again this time whet... you wish to change your retailer or ... choose any retailer you like ... go to the same ...

Squeezing the water out of food

Carrying water in food to England is much like carrying coals to Newcastle. That's why Lend-Lease shipments include so many waterless foods

SQUEEZE the water out of an egg, and you'll have about a quarter of an eggshellful left. But you'll have the part that counts.

Pack 30 dozen eggs (in the shell) to go on a long voyage, and they'll take up about 2¼ cubic feet. Powder the eggs, and they'll take only a little over ½ cubic foot.

War puts a premium on space, and drying saves space.

Since Lend-Lease operations started, about ⅓ billion powdered eggs were made available to the British up to November 1941. Had they gone in shells they would have needed 2⅓ million cubic feet in the holds of ships. Because they were shipped dry, they needed only one-fourth of that space. Drying saved 1⅘ million cubic feet where space is precious.

By the end of October 1941, some 21½ million pounds of dried milk had been or were ready to be shipped to England. Multiply 21½ million by 11 and you'll get an idea how many pounds that milk would make if it hadn't had its water removed.

Almost 300 million pounds of dried fruits and vegetables were ready at the end of October last year to be shipped to England. Multiply that by 3 and you get a rough idea of what those fruits would weigh with their water intact. Vegetable and other food shipments are increasing and shipping space is getting tighter. The tighter it gets the more important dried foods become.

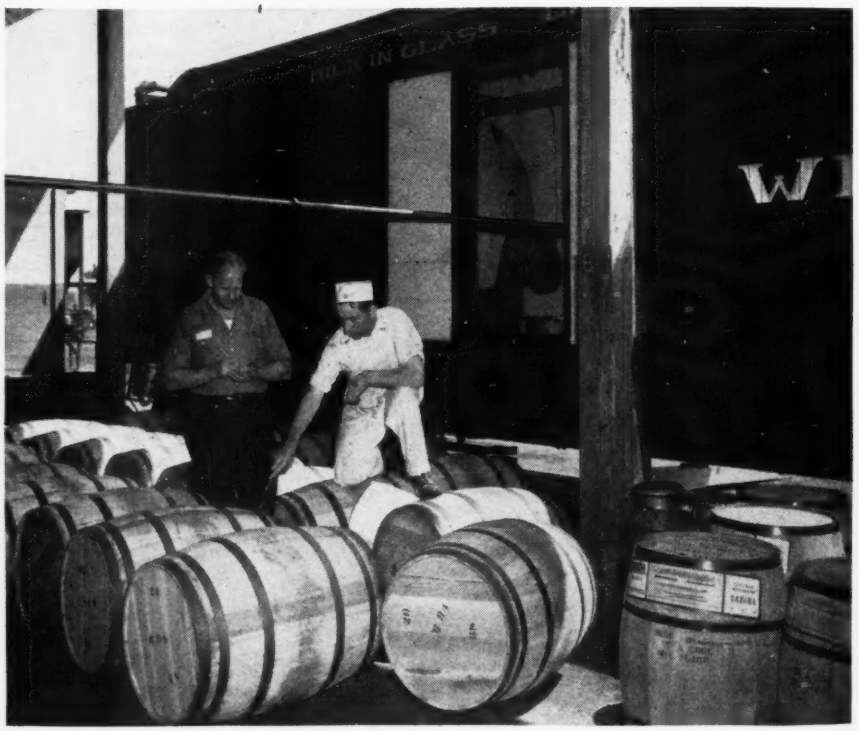
WAR MAKES MACHINERY DO DOUBLE DUTY, too.

Eggs shipped in shells, for instance, must be shipped promptly and kept chilled until they are eaten. Some may be cracked or smashed on long voyages. Powdered eggs don't need to be kept cold. They don't need to be rushed to consumers, and they can wait longer than fresh ones to be served up for food.

War makes space important in another theater. When a parachute trooper walks out of an airplane in midair, he never knows where his next meal is coming from, or when. Army people are agreed it's a good idea for him to take some food along. They are also agreed that the lighter the bundle the better off he'll be. That's why dried foods are important in parachute troop rations. The U. S. ration includes three meals that give a total of 3,311 calories in food energy. The ration weighs less than 2 pounds. Parachute rations (Ration K) go to soldiers in the armored forces, too, where space is an important consideration.

PRESENT WARTIME NEED FOR DRIED FOODS already shows in production figures. Up until this year the greatest annual production of dried eggs was 10 million pounds in 1939. 1941 production was 45 million pounds and capacity is considerably greater now. In the past 2 years, dried whole milk output swelled from 24½ to 43½ million pounds. Dried skim milk increased from 268 to about 393 million pounds. Even the drying of peas and beans, old-time favorites in many meals, shot up almost one-half billion pounds. Drief beef, which is the chipped beef you see creamed on toast, went up 10 million pounds. In spite of wartime cuts in commercial dried fruit exports, Lend-Lease shipments have bolstered the demand so that dried fruit production is beginning to climb back to normal. Lend-Lease shipments as a matter of fact, are responsible for much of the increase registered in dried food production.

ROLLING out the barrels of dry milk may not guarantee barrels of fun to British children, but it promises them better teeth and bones. These barrels, starting in Wisconsin, will journey across seas under terms of the Lend-Lease Act. Each one holds 200 pounds of powder, enough to equal 2,200 pounds of fluid milk. They go first to the children.



PARACHUTISTS, when they step out of a plane, never know where their next meal is coming from. That's why U. S. Army parachutists are testing an emergency ration. Its 3,311 calories weigh less than 2 pounds. Using dehydrated food where possible makes the ration compact in size though it contains food enough for an active man for a day.

LAID OUT on a tray the vest pocket parachute ration looks like this. Dried foods in the menu include dried fruit cake, a "pep" tablet of dried malted milk and dextrose, orange powder, coffee tablets, and bouillon cubes. Extra bulk in the 3,311 calory ration comes from vitaminized pemmican biscuit, meat spreads, and chocolate bars.

Dried food virtues sound so adaptable and obliging that you begin to wonder why dried foods aren't heard of more often. Yet in the memory of most of us the last time dried foods shot up into the headlines was during the last World War. Now they are back in the headlines. During the first World War, our Army overseas got close to 9 million pounds of dehydrated vegetables.

All of these, even the industry agreed, tasted like nothing resembling vegetables. Manufacturers were not required to meet any standards as to flavor, color, or food value. No very good rules were known about the length of time required for using and cooking. Some of the food had to be soaked 6 to 10 hours before it could be cooked. Whatever food nutrients weren't soaked out probably got cooked out.

Ask a seasoned veteran of the first World War what he thought in those days about dried vegetables, and he'll tell you it wasn't the taste so much as the looks that turned him against dried vegetables. A vegetable to him was a food shaped and colored like a vegetable. Vegetables with the shape and color soaked out (and no known amount of vitamins left inside to redeem them) gave dehydrated vegetables a bad name.

Even in 1925, 7 years after the war, there were still wartime dried vegetables lying about in cans which were worth more than the food would bring. It was difficult for the Government to get the surplus used up even as animal feed.

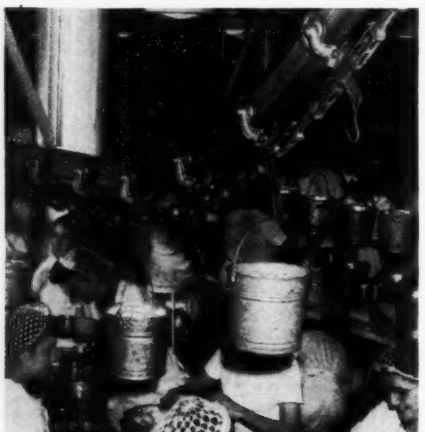
RESEARCH ON WAYS TO STEP UP THE QUALity of dried foods has gone far since the days of the last World War, but it hasn't gone far or fast enough to meet this war's needs. To help speed things up, a year ago Congress appropriated $144,000 to the Bureaus of Home Economics and Agricultural Chemistry and Engineering in the U. S. Department of Agriculture. BHE is setting up its work in

laboratories at Beltsville near Washington. Working with the Bureau are the University of California, Cornell University, and the University of Texas. At Albany, California, BACE has a big western laboratory. Like three other regional laboratories, it was built with funds from a 4 million dollar appropriation in 1937, for research on new uses for agricultural products. In this laboratory the Bureau has put 35 specialists to work on the how's and why's of dehydration.

SO FAR THIS NEW RESEARCH HAS NOT HAD A chance to tally up a long list of results, but results can be expected. Common sense tells anyone that you can't dry an egg and ever hope to have it climb back into its shell again but it should be possible to find ways to preserve egg flavor and get a dried product that in cooking will behave like fresh eggs. It should be possible, too, to turn out dried vegetables and fruits that can be used like the fresh kind and taste as good. The problem is to find out how to hold together all the qualities of the fresh product right up to the moment a dried food reaches the consumer. Research is working here.

Every stage along the drying route, from washing to storing, steps down the original quality of the fruit or vegetable a little.

DRYING the half-billion eggs that have been shipped to Britain begins in a plant like this. Care keeps everything sanitary.



That's why it's important to pick good produce of good flavor for drying. What varieties of different fruits and vegetables are best for drying is one question to answer.

Next stage in drying is preparation. All vegetables, to be dried, must first be blanched or heated. The treatment varies for vegetables. What length of time, what conditions are best for each kind? There's another field for research.

After fruits and vegetables are prepared for drying they can be laid on trays and shot into a drying tunnel, or put into a cabinet, or dried in a vacuum, or cooked up and mashed and dried on a drum dryer. Vacuum drying is a fine thing, it's too expensive to be practical. Drum drying is good for drying milk and eggs and tomato sauce and other vegetables that don't have to retain their original form. Tunnel and cabinet drying are the most common forms of drying equipment where the food is to keep its shape. Researchers have the job of testing and improving methods, and finding out more about costs.

Tunnel drying, as its name implies, takes place in a tunnel specially constructed for the purpose. Usually it is about 40 feet long, with width and height of 6 feet each. Through such a tunnel 10 drying trucks, each holding about 15 layers of trays 3 feet square or 3 by 6 feet, can pass at one time. Moisture is evaporated from the fruit by a current of warm air which is blown through the length of the tunnel.

Cabinet drying utilizes the same principle, but cabinets are smaller than tunnels, tray trucks are higher, and warm air currents are directed in such a way that they have to hit the drying food.

IN DRYING, TEMPERATURE, HUMIDITY, AND rate of air flow are things that count. Research has to find out how to make both tunnel and cabinet drying equipment create the conditions of temeprature and air flow which result in the best possible product. So far, scientists know that tunnel equipment has to have heaters along the route of the circulating air, in order to keep air temperature up where it started and help make food dry uniformly. Research, too, may track down the rule to follow about optimum moisture content to leave in dried foods.

Final steps in dehydration are packaging and storage. Anyone who knows anything about dried foods can tell you that lots of flavor, color, and food value disappear between the time foods are stored and the time they are eaten. Before the $144,000 Congress appropriated is spent, BHE and BACE hope to find the way to cut down those losses appreciably.

HOW TO KEEP FOOD VALUE IN WHILE YOU take the moisture out of foods, is another problem researchers will rack their brains on. Nutritive values of dehydrated foods now being marketed vary just as the products themselves vary. The only general statement that can be made is that protein, and caloric, and mineral values usually don't evaporate with moisture. Vitamins, in varying quantities, do. Many an expert will tell you, however, that given the proper care in processing, storing, and reconstituting (that means putting moisture back for serving) many dehydrated foods can be made to approach canned and fresh ones in nutritive values. Vitamin values, of course, are not the only treasures in foods; the perfect dehydrating processes, when they are discovered, will protect all the food values.

BRITAIN HAS BEEN RECEIVING SHIPLOADS OF unfamiliar dried foods long enough now for the novelty to have worn off, but some of the foods that have gone across the sea are still mysterious to American consumers.

Beans, peas, dried fruits find their way into most Americans' kitchens, but many of us wouldn't know dried skim milk, dried eggs, or dried vegetables if we saw them. Stamp Plan families, school lunch eaters, and some other families dependent upon public aid, though, have a jump on the rest of the country's food eaters. They've been consuming a sizeable slice of our dehydrated food production for some years back. From January 1941 to January 1942, for instance, school children got 4 million pounds of dried skim milk in luncheon dishes, and soup from 1½ million pounds of dehydrated soup mixtures. Over 140 million pounds of dried fruits went into diets of relief families, Stamp Plan families, and children eating school lunches, plus a big portion of dried beans (140 million pounds).

ALL OF THIS HAPPENED BECAUSE BACK IN 1933 the Department of Agriculture took a hand at solving the surplus problem that was furrowing farmers' brows. To keep surplus foods from knocking farm prices for a loop the Surplus Marketing Administration and its ancestors bought up some to distribute directly to low-income families and to use in school lunches. More recently they gave some surplus foods consumer preference by putting them on a list of foods that could be bought with blue stamps by low-income families.

and more of it!

That's what Food-for-Freedom plans call for, and to reach the goal farmers must plan, work, and take care. Here are some of the problems they must cope with

AMERICAN grand strategy, according to the Secretary of Agriculture, requires food production on a scale that will "win the war and write the peace." American farm families, whose efforts will produce the food, he says, will help write the history of the future.

A major objective in the American strategy for 1942 is a projected 10 billion 300 million pounds of pork, 1 billion pounds more than the production for 1941, about 400 million pounds more than was produced in 1940. The British are to get the extra production this year, leaving for American consumers as much as they had last year. (The goal for pork incidentally does not include the goal for lard which is totaled up in the production plans for fats and oils.)

Recipes tell you how to prepare pork for a family. In the case of roast pork (you don't burn the house down) you put the roast in the oven, fat side up, no water, no cover, and a clove of garlic stuck in the loin if you like a garlic flavor. Then you bake the triangular roll in a 350-degree oven, 30 minutes for each pound of pork, making sure when you take the crisp, succulent length out of the oven that the meat is done down to the bone, dry and white, with no remnant of redness.

That is the recipe for roast pork for a family of perhaps 5, for a nutritious, flavorful Sunday dinner maybe. To prepare 10 billion 300 million pounds of pork for 132 million people at home and more millions abroad, however, you need another recipe, a recipe on such a vastly different scale that you don't even call it a recipe, and instead call it grand food strategy.

What is America's pork strategy?

First of all, the pork strategy must recognize that hogs don't grow in a vacuum, which means that your plan for pork production must consider the needs of the 4 million or so American farm families that raise hogs. You have to take into account the fact that most farmers will not raise hogs unless they can expect a reasonable return for the labor they put in, and the cash they put up. You have to be realistic, too, about the biological limitations of hogs. You have to keep in mind the fact that people don't want just

SEVENTY percent of America's pork is produced in the Corn Belt but the Department of Agriculture is mobilizing every American farm family in the Food-for-Freedom battalions. Alabama tenant farmers, farmers on broad Iowa acres, farmers in the Illinois Lincoln country, farmers on the East and West Coast, all are working "all out" on the pork goal.

pork; they want pork chops, and hams, and bacon, and shoulders, and they want them of a particular leanness, and a particular size.

Charting the pork campaign you have to keep all those facts in sight.

Just because a job is big and tough, you don't shelve it. First you think of the farm families, they are the people who have got to do the job. You look at your statistics, and you see right off that almost every farm family raises some hogs part time while some farm families in every American region raise hogs full time. Thus, although 70 percent of all the hogs produced are raised in the Corn Belt, you still have to get every farm family signed up in your Food-for-Freedom program to put over a record increase in pork supplies.

You ask farm families to cooperate by telling them how important it is to increase hog production. But farm families must live. You must also show them how they can raise the hogs the country needs without losing their livelihood.

TRADITIONALLY FARMERS WATCH WHAT IS called the corn-hog ratio to determine whether hog-raising is likely to be profitable. When 100 pounds of hogs is more than the price of 11 to 12 bushels of corn, then the corn-hog ratio is likely to be favorable for raising hogs profitably. When the value of 100 pounds of hogs drops below the value of 11 to 12 bushels of corn, farmers estimate that they can't raise hogs and break even. Then they will decide not to feed corn to hogs, but instead will sell their corn. Other expenses enter into the cost of raising hogs, but the corn-hog ratio is a useful rule-of-thumb measurement.

To get farmers to produce more pork the Department of Agriculture has been supporting prices of hogs and at the same time has been evening up the price of corn.

BUT TO GET DOWN TO RAISING HOGS. FIRST of all, growing up in the hog world is difficult. A third of all the little pigs born never get to market. They die of one disease or another; they get trampled on; their mothers eat them up; they fall victims of exposure; the worms get them. The failure of one out of three pigs to grow up not only reduces the supply of pork for Food-for-Freedom plans, it also adds to the cost of producing pork and the final price. Each pig born dead represents, experts say, 140 pounds of feed. When pigs die between birth and weaning, the loss to the farmer is equivalent to 140 pounds of feed plus 1¾ pounds of feed for each day the pig lived.

The second little pig of every three in the litter does get to market, but some in this group may bring little profit to the farmer, for they may belong to the stunted, maimed, or otherwise subnormal kind of little pig. Farmers say such pigs are not thrifty, which means that they do not use feed efficiently. That is, the meat returned for the amount of feed expended is small.

The third pig in each litter is born, survives, flourishes, grows, gains weight, squeals, goes to the stockyards, and ends up as a rasher of fine bacon, a beautifully glazed ham, a crackling brown pork roast, or something equally delectable.

If you could keep the first of the three pigs alive, and then if you could take him and his unthrifty second brother and raise both of them to be porkers as healthy as the third, you could increase pork supplies by at least 35 percent with the same number of sows.

That is one way to have more pork, and almost every State Extension Service has leaflets that tell farmers about improved methods of pig raising.

Another way to get more pork is to feed hogs to heavier weights. Until the middle of 1942, in fact, that is one way more pork is going to be obtained. The Surplus Marketing Administration, in making its Food-for-Freedom purchases, is buying pork from hogs that weigh 240 and more pounds (the average weight of all hogs slaughtered is around 232 pounds). By this plan the Department of Agriculture provides a market for heavier hogs and encourages farmers to send bigger hogs to market.

A third way to get more hogs is to raise more hogs; that is, breed more sows, send fewer sows to the butcher's, save more gilts for breeding. (A gilt is to a mother pig as a heifer is to a cow; in other words, a gilt is a pig that is going to grow up to be a potential mother. In the vocabulary of hogs a barrow is the equivalent to a steer among cattle or a capon among chickens; that is, it is a desexed male. Practically all male pigs that aren't kept for breeding purposes are barrows.)

TEN BILLION 300 MILLION POUNDS OF PORK is a lot of pork but no more than the country can produce if everyone pitches in. But before you are told just how farmers are going to manage that load of pork, you ought to know a little more about pork.

Lard, a Secretary of Agriculture once said, is concentrated essence of corn. Pork by extension is essence of corn. An important part of the corn grown in the United States is fed to hogs which transform it into pork

and lard. Altogether in 1940 some 1,200 million bushels of corn were converted to pork. In 1941 some 1,140 million bushels of corn will be used to stoke these pork and lard factories on the hoof. In 1942 it is going to take some 1,270 million bushels of corn to make the mountainous 10 billion 300 million pounds of pork (and about 2 billion pounds of lard).

THE PIG IS ABOUT THE MOST EFFICIENT MEAT factory known. Pigs weigh about 3 pounds at birth. Cared for properly, they weigh about 20 pounds at 6 weeks, slightly under 40 pounds at 10 weeks, between 110 and 120 pounds at 20 weeks, and somewhere between 220 and 240 pounds at the 30th week. That is from 7 to 8 pounds of meat and lard a week per porker, and there are times when the pig without exerting himself makes 1⅔ pounds of pork a day. Roughly, it takes about 4 pounds of a balanced ration a day to make a pound of pork.

Corn, obviously, is not the only food a pig gets. But corn has been so identified with pigs that all other feeds are measured in terms of corn.

Wheat, for example, is 5 percent more efficient as a hog feed than corn, though you don't get good results if you use it to replace more than one-third the amount of corn you give a hog.

Grain sorghums are 90 percent as efficient as corn, pound for pound. Barley is from 74 to 92 percent as efficient as corn, depending upon the kind of barley. Oats of good quality are as good as corn, pound for pound. Rye rates 90 percent. Rice bran, fed in limited amounts, is 90 percent as good a pork material as corn. Limited amounts of molasses, pound for pound, is 90 percent as efficient as corn in the production of pork. It takes 4 to 5 pounds of sweetpotatoes to do the work of one pound of corn, and from 3½ to 4½ pounds of boiled potatoes (pigs sicken on raw potatoes) to measure equally against a pound of corn. Garbage, soybeans, peanuts, distillery wastes, and acorns are also used as a basic pig feed. Some of these feeds, particularly soybeans and peanuts when used too freely produce a soft oily pork which brings lower prices than the harder, firmer, corn-fed pork.

These foods are the basic fattening feeds. Like human beings, hogs, however, need balanced diets, they need additional protein (skim milk, fish meal, packinghouse tankage) for tissues and nerves, roughage, calcium for bones, phosphorus for tissues, vitamins for the same varied purposes as humans, and small quantities of a number of other minerals, iodine, iron, copper, salt, manganese, potassium.

ENOUGH IS KNOWN ABOUT FEEDING PIGS SO that farmers who want to use the knowledge can raise what are called thrifty pigs, that is, pigs that are healthy and that make good use of their feed.

Take the disease you could call nutritional anemia among human beings which is due usually to an iron deficiency in the diet. Anemic pigs, like anemic children, are sluggish, apathetic, and slow to grow. Two methods are at hand to overcome this condition. Either the farmer can make a solution of an iron compound and sprinkle the solution on 50 pounds of clean soil which is then placed in the pig pen, or he can make a solution of the iron compound and apply it to the teats of the sow. The suckling pigs then get their iron when they get their milk.

Badly nourished and insufficiently sunned little pigs also get rickets, which can be cured either by the addition of Vitamin D concentrates to the diet, or by feeding them suncured alfalfa.

Nutrition doesn't end there, either. You feed hogs you are keeping for breeding purposes a ration that differs from the ration you give hogs you are raising for market. Potential fathers and mothers need larger quantities of what nutritionists talking about human beings would call protective foods to fulfill their functions. Parenthood takes a more carefully balanced diet, more proteins, and more minerals than porkhood. What will do for a porker slated to become a ham won't do for a pig due to become a parent. Sows on unbalanced rations sometimes turn cannibal and wolf down their young. Balanced rations prevent cannibalism and produce healthier progeny, they also get farmers more pigs per litter.

PIG NUTRITION SHADES IMPERCEPTIBLY INTO pig nurture. Pigs have a reputation they don't deserve at all for being hogs when it comes to food. Pig or hog immediately conjures up an animal that gorges itself to surfeit, and then waits around in a stupor until feeding time is due again. Actually, pigs left on their own show more sense about eating than many human beings. Hogs practically

PORK is a pawn on the chessboard of war. Food-for-Freedom goals call for 10 billion 300 million pounds of pork to make up part of the Victory ration for American and its allies abroad.

CORN is the star raw material from which a hog manufactures pork. Each pound of pig represents about 4 pounds of a balanced ration, largely corn. These hams are going to England.

HAVE YOU SIGNED UP? If you want to make your time and skill count more than ever for our country, one way is to register with your local Office of Civilian Defense. If you want to know how you can work through that office send for "Civilian Defense Volunteer Office," a 35-page pamphlet which you can get free from the U. S. Office of Civilian Defense, Washington, D. C. It will tell you what opportunities there are for you in consumer programs, in health work, in nutrition and housing activities.

never overeat. As a result of recent tests by Department of Agriculture scientists, hog raisers are urged to set up a kind of hog cafeteria for pigs during the suckling period. The self-feeders are surrounded by a fence which permits the little pigs to creep up to the feed but which keeps out the sow. This method of feeding pig litters not only gives you faster growing, heavier pigs, but you get them with a smaller expenditure of feed.

Pastures are as essential for pigs as they are for cows. Pasture for pigs is what leafy, green, and yellow vegetables are for human beings; it provides roughage, minerals, and vitamins. Perhaps a more important virtue of pastures is their cleanliness. The use of clean pastures enables farmers to cut down the enormous loss of pigs from such diseases and parasites as swine erysipelas, hog cholera, roundworms, and bull nose. Finally, they enable breeding pigs to get much needed exercise.

Besides fighting off diseases with the use of clean pastures, farmers can cut pig losses by using familiar public health measures. Little pigs should be injected with anti-cholera serum. Hogs should have their bedding changed frequently, the floors of the pig house should be disinfected at regular intervals. Mud hog wallows are as objectionable as open sewers. Wallows should be made of concrete, they should be cleaned and refilled often, and every 10 days or so, crude oil should be put in the wallow to kill lice.

MANY LITTLE PIGS DIE FROM BEING TRAMpled on, from getting rolled on, or from exposure immediately after birth. Practical measures suggested by the Department of Agriculture can reduce these deaths. Guard rails can be built into pig pens so that there is no danger of the pigs in a litter being lain on, or stepped on. When a litter of pigs is born during cold weather, the pigs can be warmed by a basket or box full of hot bricks covered over with sacks, or a hot water bottle can be improvised, or a pig brooder can be made with an electric light and a reflector. This ingenious gadget acts like a heat lamp, and it keeps the little squealers warm and more or less pneumonia-proof.

When a non-farmer looks casually over the list of chores a pig raiser must do, he probably wonders why stock men don't do something less complicated, like carving sentiments on the head of a pin. But then pigs have their compensations, too. When there is a demand for pigs, there is no more profitable way of sending corn to market. And in some respects, it is an easy way. When the pigs are fattening, you can do what farmers call hogging down the corn. You simply turn the pigs out in a cornfield and they shuck it for you. Alfalfa, soybeans, peanuts, can similarly be hogged down.

To get the 10 billion 300 million pounds of pork Food-for-Freedom calls for in 1942, some 79 million 300 thousand hogs have to be farrowed, nurtured, fattened, and slaughtered. That means that between 12 and 13 million litters of pigs must be born.

The sows upon whom most of this burden falls, about 10 million of them, are bred usually for the first time when they are about 8 months old. The litter is born 112 days later, usually timed so that it arrives in early spring, or less often, in early fall. Good breeding practice then gives the sow 1 year's rest. After that she may be bred to have 2 litters a year. Many farmers as a practice keep only or mostly gilts which raise one litter of pigs and are then sent off to the butcher. A better practice, however, animal husbandmen say, is to keep sows whose progeny are successful for 3, 4, and even 5 years. Only a third of the pigs born, incidentally, are born in the fall. More pigs could be produced if more sows were bred twice a year.

For the long pull, raising swine, like raising other livestock, depends upon the careful selection of parents, and the gradual improvement of the breed. It so happens that the breeds most prevalent in the United States were developed or improved here; that is, the Duroc-Jersey, Poland China, Chester White, and others.

THE 10 BILLION 300 MILLION POUND PROgram for pork, in the end, when you come up to look at it free of the details, boils down simply to an appeal by the Government to everyone to do whatever his job is as skillfully and as scientifically as possible, conserving time, labor, and materials wherever possible. In a sense, the need for conservation, so long in the air, has become immediate and urgent. And all along the roads and up and down the streets, from little pigs in the litters to the eating of roast pork or the economical use of leftovers, it means that everyone must make a conscientious effort to do whatever he can, no matter how small, to move forward toward the large goal beyond the Food-for-Freedom goals.

Just as you can't define everybody's task today in one phrase, the large goal, too, is beyond definition.

But put it this way: The large job the country has is for everyone to do as efficiently as he can what he has to do.

The large goal is to achieve for everyone the right and the opportunity to take a shot at the things he wants to do, whether it's basting a ham with pineapple juice or raising little pigs successfully or making speeches in the public square.

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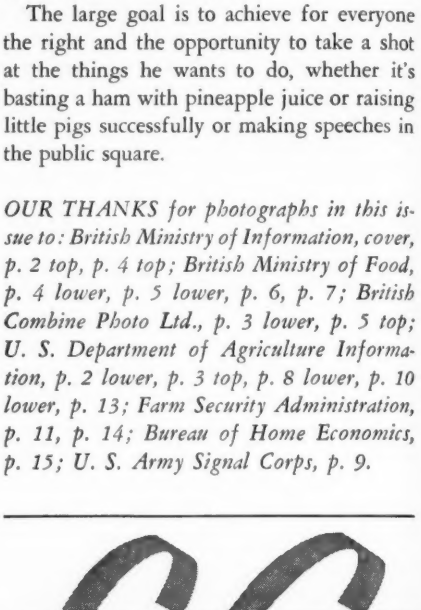

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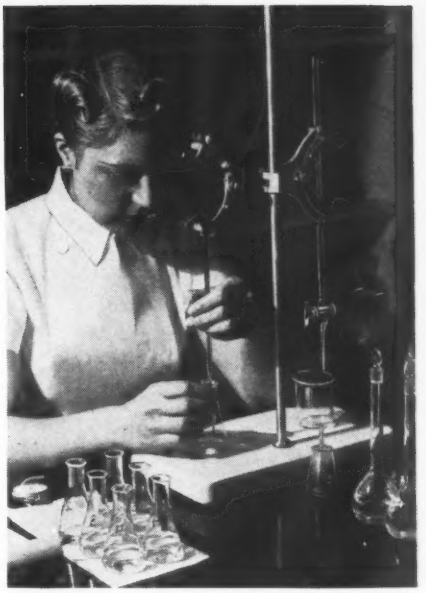
Under the microscope

BHE experts search for ways to make us stronger in war, as well as in peace



THIS researcher in BHE's Maryland laboratories is finding out what effect storage and cooking have on the Vitamin C content of potatoes, an important vegetable source for this anti-scurvy vitamin.

HOW MUCH Vitamin A, trouble shooter of "night blindness," can a person store in his body?

What ways to cook vegetables cause the smallest lost of vitamins?

What foods are the best sources of the iron and calcium the body needs?

What's the most durable type of sheeting to buy?

Is a lightweight, high-voltage iron cheaper to operate than a heavyweight, low-voltage iron?

What are the safest, easiest ways to store the garden surplus and prevent waste of vegetable and fruit supplies?

Finding answers to questions like these in war time isn't front line stuff, but it's one kind of rear guard action that war makes tremendously important.

Flyers, scouts, air raid wardens—all the dozens of different people who must do their work in the night—must have the kind of food that gives them enough Vitamin A so their eyes will adjust quickly to changes in light.

Factories that in peacetime turned out billions of household articles in hundreds of styles and brands now must go to work on munitions, and household goods must be simplified and made to standards that meet the greatest consuming needs.

Research that finds solutions to problems like these must go on, and one of the places where it is going on right now is in the Bureau of Home Economics of the U. S. Department of Agriculture.

Food is one field where BHE's research will count heavily for civilians as well as fighters. We know a lot, but not enough, about the food values we must get for maximum health and efficiency—about methods of preserving and cooking that cause the least loss of these food values. We still have lots to learn about translating these facts into economical appetizing meals. On all of these problems, Bureau scientists are concentrating. Armed with their findings, nutrition committees, Red Cross workers, civilian defense agencies can move effectively into the job of teaching people how to choose the kind of meals that will toughen their spirits as well as their muscles. Government buyers of Lend-Lease foods get help on the nutritional value of foods chosen for shipment abroad. Army buyers learn from Bureau researchers how to improve rations for the soldiers.

Over 300 samples of dehydrated food products intended for Lend-Lease shipment abroad or for school lunches came under the Bureau's eagle eye in the past year. Dried soups, dried eggs, vegetables, fruits, concentrated citrus fruit juices and other prepared products were tested for food value and taste.

Enriched white flours were studied to determine whether recipes have to be changed when that kind of flour is used in baking. Rich soybean, peanut, and rice polish flours have been tested in baking.

When raw silk imports were banned, the Textile Clothing Division of the Bureau was ready with 150 designs and specifications for cotton stockings, carefully tested for wearing quality and appearance, that could be knitted on 89 percent of the silk knitting machines of the hosiery industry.

For women who work in factories or on the farm—and there will be millions more in war—clothing specialists have designed nearly 20 women's work outfits fitted to the function they are to perform, that are good looking, too. As rapidly as these designs are completed, pattern makers and ready-to-wear garment manufacturers put them into commercial production. Home sewing guides for giving that well-tailored touch to women's coats, buying guides for boy's suits, cotton shirts, sheets, towels, and blankets, women's dresses or the cloth to make them from—these are some of the reports made available by Bureau experts to help Mrs. America get the best value for her dollars at a time when wise buying will help the Nation as well as the individual family to make the best use of raw fibers and factory output.

BHE's research on the efficient care and use of household equipment is providing Mrs. America right now with facts she must use to the limit today, as manufacturers of electric washing machines, refrigerators, stoves, irons, vacuum cleaners turn their factories to war production. It is providing Government agencies with facts they can use as they tussel with the problem of which kind of iron, which type of refrigerator, which stove, will give Mrs. America the best value for her money and make the least strain on factories busy with war orders.

Facts about family incomes and spending habits, too, take on new importance in wartime. Some prices have already gone up; others may. Some incomes have already stepped up; others haven't. Not everyone in wartime, even with factories working overtime, can, by his own effort, keep in sound health or get that way. Not everyone can pull his weight in war or peacetime. Research by the BHE shows which people need help to do that.

Farm programs are taking the first step toward goals that will give everyone the food supplies they need for health. Yardsticks of consumer food needs are drawn up by BHE's experts.

This is ground work, behind-the-scenes work, that BHE's researchers do. They are at their test tubes, slide rules, and testing machines now. They are at work gathering their facts and figures from hundreds of places and people, searching all the while for answers to more and more questions that will help to make America strong in war and sturdy in peace.

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